

Supplementary Online Content

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This supplementary material has been provided by the authors to give readers additional information about their work.

eMethods 1. Search Strategy for PubMed

Search terms were divided into four blocks. Block 1 included terms for the disease of interest (*dementia, Alzheimer's disease, frontotemporal dementia, Lewy body dementia, vascular dementia or cognitive decline*). Block 2 included terms for the measures of interest (*prevalence or incidence*). Block 3 included terms related to the age specific target population of this review (*young onset, early onset, presenile, under 65, age of onset, age distribution, adult, middle age or age factors*). Block 4 included limitations (*no clinical studies, editorials, reviews or meta-analyses*).

Search strategy for PubMed

Block 1 ((((((((((((dementi*[Title]) OR alzheimer*[Title]) OR Frontotemporal Dementia[Title]) OR vascular dementia[Title]) OR Lewy body[Title]) OR *cognitive decline[Title]) OR cognitive disorder[Title]) OR cognitive impairment[Title])) OR Creutzfeldt-Jakob[Title])) OR "Dementia/epidemiology"[Mesh]))
Block 2 AND (((("Prevalence"[Mesh]) OR "Incidence"[Mesh])) OR ((prevalence[Title/Abstract]) OR incidence[Title/Abstract]))
Block 3 AND ((((((("Age Distribution"[Mesh] OR "Age of Onset"[Mesh]) OR "Adult"[Mesh]) OR "Aged"[Mesh]) OR "Middle Aged"[Mesh])) OR (((young* onset[Title/Abstract]) OR earl* onset[Title/Abstract]) OR presenile[Title/Abstract]) OR under 65[Title/Abstract]))
Block 4 NOT (((("Clinical Trials as Topic"[Mesh]) OR "Clinical Trial" [Publication Type]) OR "Editorial" [Publication Type]) OR "Meta-Analysis" [Publication Type]) OR "Review" [Publication Type])) AND ("1990/01/01"[PDat] : "2018/12/31"[PDat]) AND Humans[Mesh])

eMethods 2. Data Extraction Sheet

Data collection form prevalence and incidence of young-onset dementia

Study <i>(author, publication year)</i>	
Study ID <i>(EndNote number)</i>	

Study Characteristics

Study design	<input type="checkbox"/> Prospective <input type="checkbox"/> Retrospective <input type="checkbox"/> Cross-sectional
Time <i>(when did the study take place)</i>	
Location <i>(and region)</i>	
Population description	<input type="checkbox"/> General population <input type="checkbox"/> GP patients Other, namely _____
Diagnosed by <i>(self-diagnosis, GP, specialist)</i>	<input type="checkbox"/> Self-report <input type="checkbox"/> Research diagnosis, comprehensive (neuropsychological test battery, consensus diagnosis) <input type="checkbox"/> GP <input type="checkbox"/> Research diagnosis, brief (eg MMSE cut off) <input type="checkbox"/> Proxy-report (eg IQ-CODE) <input type="checkbox"/> Specialist (psychiatrist, neurologist, geriatrician) <input type="checkbox"/> Other, namely _____
Data collection <i>(e.g. door-to-door survey, register)</i>	<input type="checkbox"/> clinical interview <input type="checkbox"/> survey <input type="checkbox"/> register/routine data <input type="checkbox"/> Other, namely _____
Inclusion criteria	

Exclusion criteria	

Outcome

Prevalence / incidence	
Subgroup (male/female, ethnic groups, age-bands)	
Dementia subtype (e.g. Alzheimer's disease, vascular dementia etc)	<input type="checkbox"/> All dementia <input type="checkbox"/> Frontotemporal <input type="checkbox"/> Alzheimer's disease <input type="checkbox"/> Lewy Body <input type="checkbox"/> Vascular dementia <input type="checkbox"/> Other, namely _____
Type of prevalence / incidence	
Diagnostic criteria (e.g. DSM criteria, NINCDS-ADRDA, ICD-10)	
Time period (how long was the follow up, only for incidence)	
Person years (only for incidence)	
Sample size (male/female)	
Cases (cases for prevalence or new cases for incidence)	
Rate	Crude rate: 95% uncertainty interval: from _____ to _____.

eMethods 3. Quality Assessment Tool

Appendix 1: Risk of Bias Tool

Name of author(s): _____ Year of publication: _____

Name of paper/study: _____

This tool is designed to assess the risk of bias in population-based prevalence studies. Please read the additional notes for each item when initially using the tool. Note: If there is insufficient information in the article to permit a judgement for a particular item, please answer **No (HIGH RISK)** for that particular item.

Risk of bias item	Criteria for answers (please circle one option)	Additional notes and examples
External Validity		
1. Was the study's target population a close representation of the national population in relation to relevant variables, e.g. age, sex, occupation?	<ul style="list-style-type: none"> Yes (LOW RISK): The study's target population was a close representation of the national population. No (HIGH RISK): The study's target population was clearly NOT representative of the national population. 	<p>The target population refers to the group of people or entities to which the results of the study will be generalised. Examples:</p> <ul style="list-style-type: none"> The study was a national health survey of people 15 years and over and the sample was drawn from a list that included all individuals in the population aged 15 years and over. The answer is: Yes (LOW RISK). The study was conducted in one province only, and it is not clear if this was representative of the national population. The answer is: No (HIGH RISK). The study was undertaken in one village only and it is clear this was not representative of the national population. The answer is: No (HIGH RISK).
2. Was the sampling frame a true or close representation of the target population?	<ul style="list-style-type: none"> Yes (LOW RISK): The sampling frame was a true or close representation of the target population. No (HIGH RISK): The sampling frame was NOT a true or close representation of the target population. 	<p>The sampling frame is a list of the sampling units in the target population and the study sample is drawn from this list. Examples:</p> <ul style="list-style-type: none"> The sampling frame was a list of almost every individual within the target population. The answer is: Yes (LOW RISK). The cluster sampling method was used and the sample of clusters/villages was drawn from a list of all villages in the target population. The answer is: Yes (LOW RISK). The sampling frame was a list of just one particular ethnic group within the overall target population, which comprised many groups. The answer is: No (HIGH RISK).
3. Was some form of random selection used to select the sample, OR, was a census undertaken?	<ul style="list-style-type: none"> Yes (LOW RISK): A census was undertaken, OR, some form of random selection was used to select the sample (e.g. simple random sampling, stratified random sampling, cluster sampling, systematic sampling). No (HIGH RISK): A census was NOT undertaken, AND some form of random selection was NOT used to select the sample. 	<p>A census collects information from every unit in the sampling frame. In a survey, only part of the sampling frame is sampled. In these instances, random selection of the sample helps minimise study bias. Examples:</p> <ul style="list-style-type: none"> The sample was selected using simple random sampling. The answer is: Yes (LOW RISK). The target population was the village and every person in the village was sampled. The answer is: Yes (LOW RISK). The nearest villages to the capital city were selected in order to save on the cost of fuel. The answer is: No (HIGH RISK).
4. Was the likelihood of non-response bias minimal ?	<ul style="list-style-type: none"> Yes (LOW RISK): The response rate for the study was $\geq 75\%$, OR, an analysis was performed that showed no significant difference in relevant demographic characteristics between responders and non-responders No (HIGH RISK): The response rate was $< 75\%$, and if any analysis comparing responders and non-responders was done, it showed a significant difference in relevant demographic characteristics between responders and non-responders. 	<p>Examples:</p> <ul style="list-style-type: none"> The response rate was 68%; however, the researchers did an analysis and found no significant difference between responders and non-responders in terms of age, sex, occupation and socio-economic status. The answer is: Yes (LOW RISK). The response rate was 65% and the researchers did NOT carry out an analysis to compare relevant demographic characteristics between responders and non-responders. The answer is: No (HIGH RISK). The response rate was 69% and the researchers did an analysis and found a significant difference in age, sex and socio-economic status between responders and non-responders. The answer is: No (HIGH RISK).

Internal Validity		
5. Were data collected <u>directly from the subjects</u> (as opposed to a proxy)?	<ul style="list-style-type: none"> • Yes (LOW RISK): All data were collected directly from the subjects. • No (HIGH RISK): In some instances, data were collected from a proxy. 	<p>A proxy is a representative of the subject. Examples:</p> <ul style="list-style-type: none"> • All eligible subjects in the household were interviewed separately. The answer is: Yes (LOW RISK). • A representative of the household was interviewed and questioned about the presence of low back pain in each household member. The answer is: No (HIGH RISK).
6. Was an acceptable case definition used in the study?	<ul style="list-style-type: none"> • Yes (LOW RISK): An acceptable case definition was used. • No (HIGH RISK): An acceptable case definition was NOT used. 	<ul style="list-style-type: none"> • For a study on low back pain, the following case definition was used: "Low back pain is defined as activity-limiting pain lasting more than one day in the area on the posterior aspect of the body from the bottom of the 12th rib to the lower gluteal folds." The answer is: Yes (LOW RISK). • For a study on back pain, there was no description of the specific anatomical location 'back' referred to. The answer is: No (HIGH RISK). • For a study on osteoarthritis, the following case definition was used: "Symptomatic osteoarthritis of the hip or knee, radiologically confirmed as Kellgren-Lawrence grade 2-4". The answer is: LOW RISK.
7. Was the study instrument that measured the parameter of interest (e.g. prevalence of low back pain) shown to have <u>reliability and validity (if necessary)</u> ?	<ul style="list-style-type: none"> • Yes (LOW RISK): The study instrument had been shown to have reliability and validity (if this was necessary), e.g. test-retest, piloting, validation in a previous study, etc. • No (HIGH RISK): The study instrument had NOT been shown to have reliability or validity (if this was necessary). 	<ul style="list-style-type: none"> • The authors used the COPCORD questionnaire, which had previously been validated. They also tested the inter-rater reliability of the questionnaire. The answer is: Yes (LOW RISK). • The authors developed their own questionnaire and did not test this for validity or reliability. The answer is: No (HIGH RISK).
8. Was the <u>same mode of data collection</u> used for all subjects?	<ul style="list-style-type: none"> • Yes (LOW RISK): The same mode of data collection was used for all subjects. • No (HIGH RISK): The same mode of data collection was NOT used for all subjects. 	<p>The mode of data collection is the method used for collecting information from the subjects. The most common modes are face-to-face interviews, telephone interviews and self-administered questionnaires. Examples:</p> <ul style="list-style-type: none"> • All eligible subjects had a face-to-face interview. The answer is: Yes (LOW RISK). • Some subjects were interviewed over the telephone and some filled in postal questionnaires. The answer is: No (HIGH RISK).
9. Was the <u>length of the shortest prevalence period</u> for the parameter of interest appropriate?	<ul style="list-style-type: none"> • Yes (LOW RISK): The shortest prevalence period for the parameter of interest was appropriate (e.g. point prevalence, one-week prevalence, one-year prevalence). • No (HIGH RISK): The shortest prevalence period for the parameter of interest was not appropriate (e.g. lifetime prevalence) 	<p>The prevalence period is the period that the subject is asked about e.g. "Have you experienced low back pain over the previous year?" In this example, the prevalence period is one year. The longer the prevalence period, the greater the likelihood of the subject forgetting if they experienced the symptom of interest (e.g. low back pain). Examples:</p> <ul style="list-style-type: none"> • Subjects were asked about pain over the past week. The answer is: Yes (LOW RISK). • Subjects were only asked about pain over the past three years. The answer is: No (HIGH RISK).
10. Were the <u>numerator(s) and denominator(s)</u> for the parameter of interest appropriate?	<ul style="list-style-type: none"> • Yes (LOW RISK): The paper presented appropriate numerator(s) AND denominator(s) for the parameter of interest (e.g. the prevalence of low back pain). • No (HIGH RISK): The paper did present numerator(s) AND denominator(s) for the parameter of interest but one or more of these were inappropriate. 	<p>There may be errors in the calculation and/or reporting of the numerator and/or denominator. Examples:</p> <ul style="list-style-type: none"> • There were no errors in the reporting of the numerator(s) AND denominator(s) for the prevalence of low back pain. The answer is: Yes (LOW RISK). • In reporting the overall prevalence of low back pain (in both men and women), the authors accidentally used the population of women as the denominator rather than the combined population. The answer is: No (HIGH RISK).
11. Summary item on the overall risk of study bias		
<ul style="list-style-type: none"> • LOW RISK OF BIAS: Further research is <u>very unlikely</u> to change our confidence in the estimate. • MODERATE RISK OF BIAS: Further research is <u>likely</u> to have an important impact on our confidence in the estimate and may change the estimate. 		

eTable 1. World Bank Classification

Worldbank income index

LOW-INCOME ECONOMIES (\$1,025 OR LESS) 31

Afghanistan	Guinea-Bissau	Sierra Leone
Benin	Haiti	Somalia
Burkina Faso	Korea, Dem. People's Rep.	South Sudan
Burundi	Liberia	Syrian Arab Republic
Central African Republic	Madagascar	Tajikistan
Chad	Malawi	Tanzania
Congo, Dem. Rep	Mali	Togo
Eritrea	Mozambique	Uganda
Ethiopia	Nepal	Yemen, Rep.
Gambia, The	Niger	
Guinea	Rwanda	

LOWER-MIDDLE INCOME ECONOMIES (\$1,026 TO \$3,995) 47

Angola	India	Papua New Guinea
Bangladesh	Indonesia	Philippines
Bhutan	Kenya	São Tomé and Príncipe
Bolivia	Kiribati	Senegal
Cabo Verde	Kyrgyz Republic	Solomon Islands
Cambodia	Lao PDR	Sudan
Cameroon	Lesotho	Timor-Leste
Comoros	Mauritania	Tunisia
Congo, Rep.	Micronesia, Fed. Sts.	Ukraine
Côte d'Ivoire	Moldova	Uzbekistan
Djibouti	Mongolia	Vanuatu
Egypt, Arab Rep.	Morocco	Vietnam
El Salvador	Myanmar	West Bank and Gaza
Eswatini	Nicaragua	Zambia
Ghana	Nigeria	Zimbabwe
Honduras	Pakistan	

UPPER-MIDDLE-INCOME ECONOMIES (\$3,996 TO \$12,375) 60

Albania	Fiji	Namibia
Algeria	Gabon	Nauru
American Samoa	Georgia	North Macedonia
Argentina	Grenada	Paraguay

Armenia	Guatemala	Peru
Azerbaijan	Guyana	Romania
Belarus	Iran, Islamic Rep.	Russian Federation
Belize	Iraq	Samoa
Bosnia and Herzegovina	Jamaica	Serbia
Botswana	Jordan	Sri Lanka
Brazil	Kazakhstan	South Africa
Bulgaria	Kosovo	St. Lucia
China	Lebanon	St. Vincent and the Grenadines
Colombia	Libya	Suriname
Costa Rica	Malaysia	Thailand
Cuba	Maldives	Tonga
Dominica	Marshall Islands	Turkey
Dominican Republic	Mauritius	Turkmenistan
Equatorial Guinea	Mexico	Tuvalu
Ecuador	Montenegro	Venezuela, RB

HIGH-INCOME ECONOMIES (\$12,376 OR MORE) 80

Andorra	Gibraltar	Palau
Antigua and Barbuda	Greece	Panama
Aruba	Greenland	Poland
Australia	Guam	Portugal
Austria	Hong Kong SAR, China	Puerto Rico
Bahamas, The	Hungary	Qatar
Bahrain	Iceland	San Marino
Barbados	Ireland	Saudi Arabia
Belgium	Isle of Man	Seychelles
Bermuda	Israel	Singapore
British Virgin Islands	Italy	Sint Maarten (Dutch part)
Brunei Darussalam	Japan	Slovak Republic
Canada	Korea, Rep.	Slovenia
Cayman Islands	Kuwait	Spain
Channel Islands	Latvia	St. Kitts and Nevis
Chile	Liechtenstein	St. Martin (French part)
Croatia	Lithuania	Sweden
Curaçao	Luxembourg	Switzerland
Cyprus	Macao SAR, China	Taiwan, China
Czech Republic	Malta	Trinidad and Tobago
Denmark	Monaco	Turks and Caicos Islands
Estonia	Netherlands	United Arab Emirates

Faroe Islands	New Caledonia	United Kingdom
Finland	New Zealand	United States
France	Northern Mariana Islands	Uruguay
French Polynesia	Norway	Virgin Islands (U.S.)
Germany	Oman	

eTable 2. Detailed Information on Studies Included in the Review

Author, publication year	Country	Research year	Sample size	Age range	Study design	Method of data collection	Diagnostic criteria	Type of dementia studied	Quality assessment score	In meta-analysis
Adelman, 2011	United Kingdom <i>London</i>	2007-2008	60	60-64	Cross-sectional 2-phase survey	Phase 1: screening interview with MMSE Phase 2: diagnostic interview, using the CAMDEX-R	ICD-10 DSM-IV	All types of dementia	10	Yes
Andreasen, 1999	Sweden <i>Piteå River Valley</i>	1990-1995	18918	40-64	Retrospective register study	Data from the Piteå River Valley Hospital, where all patients are diagnosed the same way	DSM-III	Alzheimer's disease Vascular dementia Frontotemporal dementia Other	7	Yes
Ahmadi-Abhari, 2017	United Kingdom <i>England</i>	2002-2013		50-64	Prospective cohort study	Every wave: 3 sets of cognitive tests, or IQCODE for informant if participant is unable to come, or self-reported doctor diagnosis of dementia.	DSM-IV	All types of dementia	7	No
Arslantas, 2009	Turkey <i>Eskisehir</i>	2002-2004	1605	55-64	Cross-sectional 2-phase survey	Phase 1: MMSE and questionnaire about demographic, occupational and social data. Phase 2: neurological evaluation,	NINCDS-ADRDA McKeith NINDS-AIREN Lund & Manchester DSM-IV	All types of dementia	9	Yes

						neuropsychological assessment, laboratory and neuroradiological tests				
Bachman, 1992	United States of America <i>Framingham</i>	1982-1983	285	60-64	Cross-sectional 2-phase study	Phase 1: screening with MMSE Phase 2: additional testing with neurologic examination, mental status examination, neuropsychological tests	DSM-III	All types of dementia	8	Yes
Banerjee, 2008	India <i>Kolkata</i>	2002-2003	3800	51-64	Cross-sectional 2-phase study	Phase 1: survey with preset questionnaire regarding memory Phase 2: examination by neurologist and psychiatrist, neuropsychological tests	DSM-IV	All types of dementia	8	Yes
Banerjee, 2017	India <i>Kolkata</i>	2003-2008	11,826	50-64	Cross-sectional 2-phase study	Phase 1: general questionnaire for informant, with 2 questions on cognition Phase 2: interview by neurologist and neuropsychological test battery	DSM-IV	All types of dementia	6	Yes

Bartoloni, 2014	Argentina <i>Slums of Buenos Aires</i>	2012-2013	510	60-64	Cross-sectional 2-phase study	Phase 1: screening interview, medical history, MMSE, GDS, questionnaire for functional impairment ADL. Phase 2: not clear	DSM-IV	All types of dementia	6	No
Basta, 2018	Greece <i>Crete</i>	2013-2014	418	60-64	Cross-sectional 2-phase study	Phase 1: interview including MMSE Phase 2: neuropsychiatric and neuropsychologic assessment	DSM-IV	All types of dementia	8	Yes
Bawih Inu, 2014	Malaysia <i>Mukah</i>	2013	93	60-64	Cross-sectional 2-phase study	Phase 1: screening with ECAQ questionnaire Phase 2: clinical interview	DSM-IV	All types of dementia	7	No
Beard, 1991	United States of America <i>Rochester</i>	1975-1980		0-64	Retrospective register study	Registry from the Mayo clinic, nursing homes, Veterans Administration, University of Minnesota Hospitals in Minneapolis		All types of dementia	7	Yes
Bernardi, 2012	Italy <i>Biv</i>	2004	137	50-64	Cross-sectional 2-phase study	Phase 1: interview with cognitive screening battery Phase 2: neurological	Lund & Manchester NINCDS-ADRDA McKeith	All types of dementia	9	Yes

						examination, neuropsychological examination, clinical history	NINDS-AIREN			
Borroni, 2011	Italy <i>Brescia County</i>	2009	317,107	45-64	Retrospective register study	Postal enquiry requesting referral of all patients with young onset diagnosis. All referred cases were evaluated	McKhann criteria Neary criteria	Alzheimer's disease Frontotemporal dementia	9	Yes
Bottino, 2008	Brazil <i>São Paulo</i>	2002-2003	375	60-64	Cross-sectional 2-phase study	Phase 1: screening with cognitive tests and functional scales Phase 2: diagnostic evaluation with medical history, physical and neurological examination, CT/MRI, neuropsychological tests	DSM-IV	All types of dementia	9	Yes
Bowirrat, 2000	Israel <i>El-Fahm, Ara-Ar'ara, Kafar-Qara</i>	1995	186	60-64	Cross-sectional 1-phase study	Interview and examination by physician, using standard tasks	DSM-IV	Alzheimer's disease	10	Yes
Campion, 1999	France <i>Rouen</i>	1991-1998	94,593	41-60	Retrospective register study	Registers from the department of neurology of the University Hospital in Rouen were used	NINCDS-ADRDA	Alzheimer's disease	9	Yes

César, 2016	Brazil <i>Tremembé</i>	2011	152	60-64	Cross-sectional 1-phase study	Assessment including history taking, physical and neurological examination, cognitive assessment, psychiatric evaluation, functional activity questionnaire	McKahn criteria	All types of dementia	9	Yes
Chandra, 1998	India <i>Ballabgarh</i>		2411	55-64	Cross-sectional 2-phase study	Phase 1: screening interview including cognitive screening battery Phase 2: clinical and diagnostic evaluation including medical history, physical, neurologic and mental status examination and laboratory tests	DSM-IV	All types of dementia	10	Yes
Coria, 1992	Spain <i>Turégano</i>	1990	293	40-64	Cross-sectional 2-phase study	Phase 1: screening with Hodkinson test Phase 2: clinical evaluation with CEMED instrument	DSM-III NINCDS-ADRDA	All types of dementia	9	Yes
Corso, 1992	Italy <i>Sicily</i>	1989-1990	2971	40-64	Cross-sectional 1-phase study	Information from MMSE, CDR and PM 38 test		All types of dementia	7	Yes

Das, 2006	India <i>Kolkata</i>	2003-2004	4192	50-59	Cross-sectional 2-phase study	Phase 1: questionnaire including cognitive testing by neuropsychologist Phase 2: examination by neurologist	DSM-IV	All types of dementia	9	Yes
De Ronchi, 2005	Italy <i>Ravenna Province</i>	1991	1486	61-64	Cross-sectional 2-phase study	Phase 1: interview and screening with MMSE and GDS Phase 2: clinical examination with general and neurological examination	DSM-III	All types of dementia	7	Yes
Ding, 2014	China <i>Shanghai</i>	2010-2011	666	60-64	Cross-sectional 1-phase study	Clinical interview including medical history, medication use, neurological examination, CDR and neuropsychological test battery	DSM-IV NINCDS-ADRDA NINDS-AIREN	All types of dementia	8	Yes
Dominguez, 2018	Philippines <i>Marikina City</i>	2011-2012	352	60-64	Cross-sectional 1-phase study	Evaluation by a multidisciplinary team, including neuropsychological tests, physical and neurological examination, CDR	DSM-IV NINCDS-ADRDA	All types of dementia	10	Yes
Egeberg, 2016	Denmark	2018	3,351,912	18-64	Cross-sectional	Data from the Danish Civil Registration	ICD-10	All types of dementia	9	Yes

					register study	System, including all inhabitants from Denmark				
El Tallawy, 2012	Egypt <i>New Valley Governate</i>	2005-2008	4236	50-59	Cross-sectional 3-phase study	Phase 1: screening including MMSE Phase 2: diagnostic phase, including medical history, meticulous examination, family interview, psychometric assessment Phase 3: for patients in hospital, including MRI/CT, ECG, laboratory	DSM-IV	All types of dementia	9	Yes
El Tallawy, 2014	Egypt <i>Al-Quesir city</i>	2009-2012	2222	50-59	Cross-sectional 3-phase study	Phase 1: screening including MMSE Phase 2: clinical history, meticulous examination, psychometric assessment Phase 3: for patients in hospital, including MRI/CT, ECG, laboratory	DSM-IV	All types of dementia	9	Yes
Farrag, 1998	Egypt <i>Assiut</i>	1993-1994	634	60-64	Cross-sectional 3-phase study	Phase 1: screening with MMSE Phase 2: personal interview, family	DSM-III NINCDS-ADRDA	All types of dementia	9	Yes

						interview, medical history, clinical examination including physical and neurological examination, different tests Phase 3: laboratory tests				
Freyne, 1998	Ireland <i>Dublin</i>		26,182	45-64	Retrospective register study	Data from health professionals, followed by a semi-structured interview	DSM-IV	All types of dementia	10	Yes
Gilberti, 2012	Italy <i>Vallecampa</i>	2010	31,703	45-64	Retrospective register study	Data from the outpatient database of the Neurology Unit of the Vallecampa Hospital	Neary and McKahn criteria	Frontotemporal dementia	8	Yes
Harvey, 2003	United Kingdom <i>London</i>		240,766	30-64	Retrospective survey	Phase 1: all healthcare professionals were contacted with personal letters, and hospital registers were searched for cases Phase 2: available healthcare information from cases were reviewed Phase 3: clinical assessment for	DSM-IV NINCDS-ADRDA NINDS-AIREN Lund and Manchester criteria	All types of dementia	8	Yes

						half of the patients				
Hatada, 1999	Japan <i>Nagasaki Prefecture</i>	1995	497	60-64	Cross-sectional 2-phase study	Phase 1: self-monitoring questionnaire Phase 2: interview by psychiatrist with subjects and caregivers	DSM-IV ICD-10 DCR	All types of dementia	10	Yes
Heath, 2015	Scotland	2007	616,245	40-64	Cross-sectional register study	Presence of a specified Read Code in the GP registry, or a prescription of anticholinesterase inhibitors	DSM-IV	All types of dementia	9	Yes
Huang, 2016	China <i>Qinghai</i>	2014	974	60-64	Cross-sectional 1-phase study	Interview including neuropsychological tests, a detailed cognitive history, standardized general and neurological examinations	NINCDS-ADRDA	Alzheimer's disease	9	Yes
Huriletemuer, 2011	Mongolia	2008-2009	4156	55-64	Cross-sectional 3-phase study	Phase 1: screening questionnaire and interview with detailed medical history and MMSE Phase 2: assessment tools Phase 3: revisit after 6 months with same	DSM-IV	Alzheimer's disease	9	Yes

						assessment and CT				
Ibach, 2003	Germany	2001	20,231,092	45-64	Prospective study	Patients were thoroughly investigated by specialists, with medical history and structural neuroimaging	Neary criteria	Frontotemporal dementia	8	Yes
Ikejima, 2009	Japan <i>Ibaraki Prefecture</i>	2006	1,799,340	20-64	Retrospective survey	Questionnaire to different medical institutions about the number of patients with young onset dementia, with quality control checking half of the patients	DSM-IV Lund & Manchester criteria DSM-II-R	All types of dementia	8	Yes
Ji, 2015	China <i>Ji County</i>		1683	60-64	Cross-sectional 2-phase study	Phase 1: screening interview including medical history, MMSE, physical and neurological examinations Phase 2: detailed physical and neurological examination by neurologist	DSM-IV NINCDS-ADRDA NINDS-AIREN	All types of dementia	9	Yes
Jitapunkul, 2001	Thailand	1997		60-64	Cross-sectional 1-phase study	Interview with CMT test, and questioning about daily life		All types of dementia	7	No

Kodesh, 2018	Israel		47507	60-64	Retrospective register study	Registry data from a central database including all insured people	ICD-10	All types of dementia	9	Yes
Kosteniuk, 2016	Canada <i>Saskatchewan</i>	2005-2006 2012-2013	258,123 292,192	45-64	Retrospective register study	Registry data from the hospital discharge abstract database, physician services claims database, prescription drug database, long-term care database	ICD-9 + 10	All types of dementia	9	Yes
Kurl, 2018	Finland		2682	42-64	Prospective cohort study	Register data from the National Hospital Discharge Register, and the death certificate register	ICD-9 + 10	All types of dementia	8	Yes
Kvello-Alme	Norway <i>Trøndelag</i>		200,024	30-64	Retrospective register study	Primary sources: hospital databases. Secondary sources: hospital-based and community-based sources	DSM-IV	All types of dementia	8	Yes
Li, 2014	Australia	2008-2011	52,489	45-64	Retrospective register study	Registry data from the hospital separations dataset, the primary care information	ICD-10	All types of dementia	8	Yes

						system, the aged care and disability database, and the registry of birth, deaths and marriages				
Liu, 1994	China <i>Kinmen</i>	1992	201	50-64	Cross-sectional 2-phase study	Phase 1: interview with CASI C-2.0, BDS, IQCODE Phase 2: assessment with interview, neurological examination, CDR	DSM-III	All types of dementia	8	Yes
Liu, 1995	Taiwan		3009	41-59	Cross-sectional 2-phase study	Phase 1: screening with MMSE Phase 2: assessment by neurologic examination, MMSE, mental status examination	DSM-III	All types of dementia	10	No
Lopes, 2012	Brazil <i>Ribeirão</i>		265	60-64	Cross-sectional 2-phase study	Phase 1: interview and screening with MMSE, FOME, IQCODE Phase 2: examination by psychiatrist or geriatrician with the CAMDEX interview	DSM-IV	All types of dementia	9	Yes

Luukkainen, 2015	Finland <i>Ostrobothnia</i>	2006-2010	341,164	0-64	Retrospective register study	Registry data from the hospital discharge register	ICD-10/Neary criteria	Frontotemporal dementia	8	Yes
Martens, 2007	Canada <i>Manitoba</i>	1997-2002		55-64	Retrospective register study	Registry data from hospital claims, medical claims, (personal) home care, registry files, vital statistics, pharmaceutical claims, record of mental health community services	ICD-9	All types of dementia	8	No
Masika, 2019	Tanzania <i>Dodoma</i>	2018	17	60-64	Cross-sectional 1-phase study	Diagnosis by psychiatrist including clinical interview, cognitive tests, clinical history, neurological examinations	DSM-IV	All types of dementia	7	No
Mathuranath, 2010	India <i>Kerala</i>	2004	794	55-64	Cross-sectional 2-phase study	Phase 1: cognitive screening battery including MMSE, ACE and tests for different cognitive domains Phase 2: evaluation including medical history, examination, mental examination, neuropsychological examination	DSM-IV	All types of dementia	9	Yes

Mayeda, 2013	United States of America <i>Sacramento, California</i>	1998-2007	437	60-64	Prospective cohort study	Phase 1: screening with MMSE and SEVLT Phase 2: neuropsychological test battery, standard neuropsychological examination	DSM-IV	All types of dementia	9	Yes
Molero, 2007	Venezuela <i>Maracaibo</i>	1998-2001	1074	55-64	Cross-sectional 2-phase study	Phase 1: interview including SPM-SQ Phase 2: evaluation including clinical and laboratory examinations, proxy interview, MRI	DSM-IV	All types of dementia	7	Yes
Momtaz, 2014	Malaysia	2003-2006		60-64	Cross-sectional 1-phase study	Diagnosis using the GMS-AGECAT	DSM-III	All types of dementia	8	No
Neita, 2013	Jamaica <i>Kingston</i>	2010	40	60-64	Cross-sectional 2-phase study	Phase 1: screening with MMSE Phase 2: diagnostic evaluation	DSM-IV	All types of dementia	9	Yes
Newens, 1993	United Kingdom <i>Northern Health Regions</i>	1985-1986	655800	45-64	Retrospective register study	Registry data from hospitals	ICD-9/DSM-III	Alzheimer's disease	10	Yes
Ng, 2010	Singapore	2003-2004	336	60-64	Cross-sectional 1-phase study	Interview using the GMSS	DSM-IV	All types of dementia	9	Yes

Nielsen, 2010	Denmark	1980-2008	62,603	20-64	Retrospective register study	Data from the National Patient Register and Psychiatric Central Research Register	ICD 8 + 10	All types of dementia	7	No
Nordström, 2013	Sweden		488,484	18-64	Retrospective register study	Information was obtained from the Swedish National Hospital Discharge Patient Register	ICD 8 - 10	All types of dementia	7	Yes
Nunes, 2010	Portugal	2003	486	55-64	Cross-sectional 2-phase study	Phase 1: screening interview with screening tests and neuropsychological evaluation Phase 2: clinical examination with CT and laboratory and medical record review	DSM-IV	All types of dementia	10	Yes
Nyberg, 2014	Sweden	1978-2010	1,174,483	18-64	Retrospective register study	Data from the Swedish National Hospital Discharge Register	ICD 9 + 10	All types of dementia	7	Yes
Ott, 1995	The Netherlands <i>Rotterdam</i>	1990-1993	2613	55-64	Cross-sectional 3-phase study	Phase 1: brief cognitive tests, including MMSE, GMS-A Phase 2: CAMDEX diagnostic interview	DSM-III NINCDS-ADRDA	All types of dementia	10	Yes

						Phase 3: examination by neurologist, MRI, neuropsychologic al tests				
Palmer, 2014	Bangladesh	2003- 2004		60- 64	Cross- sectional 3- phase study	Phase 1: screening with MMSE Phase 2: diagnosis by physician with medical examination, and mental status examination Phase 3: review by second physician	DSM-IV	All types of dementia	6	No
Parlevliet, 2016	The Netherlands	2010- 2013	1231	55- 64	Cross- sectional 1- phase study	Research appointment with CCD screening, which consists of three tests for visual memory, mental speed and selective and divided attention		All types of dementia	6	No
Perkins, 1997	United States of America <i>Houston</i>	1991		60- 64	Cross- sectional 2- phase study	Phase 1: interview with MMSE Phase 2: clinical evaluation with medical history, neurological examination, physical examination, laboratory,	NINCDS- ADRDA	All types of dementia	6	No

						neuropsychologic tests				
Petersen, 2019	Faroe Islands	2010-2017	49,810	0-64	Retrospective register study	Database from the Dementia Clinic was used	ICD-10	All types of dementia	9	Yes
Phantumchinda, 1991	Thailand <i>Bangkok</i>	1989	205	60-64	Cross-sectional 3-phase study	Phase 1: screening with MMSE Phase 2: probably diagnosis by physician Phase 3: definite diagnosis by neurologist	DSM-III-R	All types of dementia	8	No
Phung, 2010	Denmark	2003		40-64	Retrospective register study	Data from the National Patient Register and Psychiatric Central Research Register	ICD-10	All types of dementia	9	No
Radford, 2015	Australia <i>New South Wales</i>	2008-2012	172	60-64	Cross-sectional 2-phase study	Phase 1: structured interview with MMSE Phase 2: examination with detailed medical and cognitive assessment	DSM-IV	All types of dementia	9	No
Raina, 2010	India <i>Chattah zone</i>		658	60-64	Cross-sectional 2-phase study	Phase 1: screening interview with MMSE and EASI Phase 2: clinical evaluation including detailed history, physical and neurological		All types of dementia	8	No

						examination and interview with informant				
Raina, 2014	India <i>Himachal Pradesh</i>		746	60-64	Cross-sectional 2-phase study	Phase 1: interview with MMSE Phase 2: clinical evaluation including detailed clinical history		All types of dementia	7	Yes
Raina, 2016	India <i>Himachal Pradesh</i>		149	60-64	Cross-sectional 2-phase study	Phase 1: a cognitive screen using MMSE Phase 2: clinical evaluation by a neurologist		All types of dementia	9	Yes
Ratnavalli, 2002	United Kingdom <i>Cambridge</i>	2000	72,815	45-64	Retrospective register study	Data from the database of the specialist services	DSM-III	All types of dementia	7	Yes
Razdan, 2008	India <i>Kashmiri</i>		80	60-64	Cross-sectional 2 phase study	Phase 1: screening with MMSE Phase 2: clinical evaluation including medical history, physical examination, mental status		All types of dementia	5	No
Rocca, 1990	Italy	1987	228	60-64	Cross-sectional 2-phase study	Phase 1: brief cognitive test Phase 2: standard diagnostic protocol (MMSE, physical and neurologic examination)	DSM-III	All types of dementia	6	Yes

Rosso, 2003	The Netherlands	1994-2002	7,613,143	30-64	Retrospective register study	Clinical diagnosis by specialist	Lund & Manchester	Frontotemporal dementia	8	Yes
Ruano, 2019	Portugal <i>Porto</i>	1999-2003	225	55-64	Prospective cohort study	Phase 1: MMSE + MoCA Phase 2: clinical evaluation with interview and examination	DSM-V	All types of dementia	8	Yes
Sahadevan, 2008	Singapore <i>Ang Mo Kio, Bishan, Serangoon, Toa Payoh, Yishun districts</i>	2001-2003	9035	50-64	Cross-sectional 2-phase study	Phase 1: interview including Abbreviated Mental Test Phase 2: assessment using semi-structured protocol	DSM-IV	All types of dementia	7	Yes
Shaji, 1996	India <i>Kerala</i>		608	60-64	Cross-sectional 2-phase study	Phase 1: screening through MMSE Phase 2: assessment of cognitive impairment using CAMDEX section B and H Phase 3: clinical evaluation by psychiatrist	DSM-III-R	All types of dementia	9	Yes
Sharifi, 2016	Iran <i>West Azerbaijan, North Korasan, Sistan and Baluchistan,</i>	2012		60-64	Cross-sectional 2-phase study	Phase 1: brief cognitive assessment tool, including 3-word recall test and functional assessment	DSM-IV	All types of dementia	8	No

	<i>Khuzestan, Alborz</i>					Phase 2: diagnosis by GP based on DSM-IV criteria				
Smith, 2008	Australia <i>The Kimberley</i>		236	45-64	Cross-sectional 2-phase study	Phase 1: KICA, cognitive function assessment Phase 2: clinical examination including medical history review, cognitive testing, informant interview	DSM-IV	All types of dementia	9	No
Spada, 2009	Italy <i>Sicily</i>	2005-2006	60	60-64	Cross-sectional 2-phase study	Phase 1: clinical examination, personal interview, MMSE and clock drawing test Phase 2: visit by specialist, diagnostic test and laboratory tests	DSM-IV	All types of dementia	10	Yes
Subramaniam, 2015	Singapore		619	60-64	Cross-sectional 1-phase study	1066 protocol, with GMS, CSI'D, CERAD 10 word list, neurological assessment	DSM-IV	All types of dementia	10	Yes
Urakami, 1998	Japan <i>Daisen-cho</i>	1980-1990	1236 1626	60-64	Cross-sectional 2-phase study	Phase 1: screening test Phase 2: examination including neurologic evaluation, cognitive	DSM-III	All types of dementia	7	Yes

						evaluation, psychosocial assessment, laboratory tests, CT				
Vas, 2001	India <i>Bombay</i>	1991	20,555	40-64	Cross-sectional 3-phase study	Phase 1: screening with SCAG Phase 2: MMSE Phase 3: evaluation including clinical evaluation, cognitive evaluation	DSM-IV HIS NINCDS-ADRDA	All types of dementia	9	Yes
Wada-Isoe, 2012	Japan <i>Tottori Prefecture</i>	2010	164,285	45-64	Retrospective survey	Questionnaire to all neurology and psychiatry departments of the hospitals in the Prefecture Tottori	Neary criteria	Frontotemporal dementia	7	Yes
Wang, 2000	China <i>Beijing</i>	1995	1275	60-64	Cross-sectional 2-phase study	Phase 1: screening with MMSE Phase 2: clinical evaluation by neurologist, with medical history, neurological examination, psychological tests	DSM-III ICD-10 HIS	All types of dementia	10	Yes
Wangtongkum, 2008	Thailand <i>Chiang Mai</i>	2004-2005	992	45-64	Cross-sectional 2-phase study	Phase 1: screening with MMSE, Beck Depression Inventory	DSM-IV NINDS-AIREN	All types of dementia	7	Yes

						Phase 2: diagnosis by neurologist, laboratory assessment and CT-scan				
Winblad, 2010	Finland <i>Haapajärvi</i>		157	60- 64		Phase 1: including all registered people with dementia Phase 2: screening with MMSE, and neuropsychologic al tests, laboratory, CT	DSM-IV	All types of dementia	7	Yes
Withall, 2014	Australia <i>Sydney</i>	2008	129,070	30- 64	Retrospectiv e survey	Distribution of a questionnaire to health professionals	DSM-IV	All types of dementia	9	Yes
Wong, 2016	Canada	2011- 2012		45- 64	Cross- sectional study	Questionnaire for self-reported diagnosis of dementia		All types of dementia	4	No
Yue, 2016	China <i>Ji County</i>		1674	60- 64	Cross- sectional 2- phase study	Phase 1: interview with MMSE, CDR scale, ADL scale, if dementia was suspected also physical examination, blood test, neuroimaging Phase 2: interview by neurologist	DSM-IV	All types of dementia	10	Yes

Zhang, 2005	China <i>Beijing, Xian, Shanghai, Chengdu</i>	1997	14,152	55-64	Cross-sectional 3-phase study	Phase 1: screening with MMSE, ADL, medical history, brief physical and neurologic examination Phase 2: clinical assessment with neurologic examination, neuropsychological tests, (proxy) interview Phase 3: six months diagnostic confirmation	NINCDS-ADRDA NINDS-AIREN	Alzheimer's disease Vascular dementia	8	Yes
Zhou, 2006	China <i>Linxian</i>	1999-2000	9294	40-64	Cross-sectional 2-phase study	Phase 1: collection of general medical history, MMSE, brief neurologic examination Phase 2: neuropsychological battery	DSM-IV	Alzheimer's disease	8	Yes
Ziegler, 2009	Germany	2002		60-64	Retrospective register data	Data from the German Sick Funds	ICD-10	All types of dementia	8	Yes

eTable 3. Results Data Analyses of Subgroups

All type dementia

		World Bank Classification				Study methodology		Gender	
Age ranges	All type dementia	High-income countries	Upper-middle-income countries	Lower-middle-income countries	Low-income countries	Cohort studies	Register-based studies	Male	Female
All	439.7/100,000 (299.6-645.0) 58 articles	338.9/100,000 (206.0-557.0) 33 articles	1529.9/100,000 (939.9-2481.0) 12 articles	320.6/100,000 (153.8-666.8) 13 articles	No data ¹	663.6/100,000 (449.1-979.4) 46 articles	121.8/100,000 (70.1-211.4) 12 articles	216.5/100,000 (143.8-325.6) 37 articles	293.1/100,000 (186.7-459.9) 33 articles
All except 60-64	195.0/100,000 (126.4-300.8) 31 articles	131.6/100,000 (87.0-198.9) 19 articles	1417.6/100,000 (672.7-2962.6) 4 articles	207.8/100,000 (102.2-422.1) 8 articles	No data	306.7/100,000 (175.1-536.7) 20 articles	98.3/100,000 (65.4-147.7) 11 articles	168.6/100,000 (110.8-256.5) 24 articles	197.7/100,000 (118.7-329.2) 21 articles
30-34	5.9/100,000 (3.3-10.6) 4 articles	5.9/100,000 (3.3-10.6) 4 articles	No data	No data	No data	No data	5.9/100,000 (3.3-10.6) 4 articles	Insufficient data ²	Insufficient data
35-39	5.9/100,000 (3.6-9.4) 5 articles	5.9/100,000 (3.6-9.4) 5 articles	No data	No data	No data	No data	5.9/100,000 (3.6-9.4) 5 articles	Insufficient data	Insufficient data
40-44	23.9/100,000 (12.9-44.5) 6 articles	23.9/100,000 (12.9-44.5) 6 articles	No data	No data	No data	No data	23.9/100,000 (12.9-44.5) 6 articles	Insufficient data	Insufficient data
45-49	43.0/100,000 (25.9-71.2) 6 articles	43.0/100,000 (25.9-71.2) 6 articles	No data	No data	No data	No data	43.0/100,000 (25.9-71.2) 6 articles	Insufficient data	Insufficient data
50-54	76.7/100,000 (56.6-104.1) 11 articles	81.3/100,000 (59.4-111.1) 9 articles	No data	45.2/100,000 (17.0-120.5) 2 articles	No data	59.9/100,000 (28.6-125.6) 4 articles	80.2/100,000 (57.8-111.3) 7 articles	67.2/100,000 (45.4-99.4) 7 articles	81.2/100,000 (54.5-121.1) 8 articles
55-59	173.5/100,000 (105.6-284.8) 15 articles	148.5/100,000 (117.5-187.6) 13 articles	Insufficient data	40.6/100,000 (5.7-287.3) 2 articles	No data	200.7/100,000 (70.6-569.7) 9 articles	145.0/100,000 (112.5-186.8) 7 articles	168.7/100,000 (130.7-217.7) 11 articles	211.5/100,000 (100.1-446.4) 12 articles
60-64	838.6/100,000 (601.4-1168.4) 45 articles	663.9/100,000 (441.8-996.4) 27 articles	1873.6/100,000 (1037.4-3360.8) 9 articles	764.2/100,000 (366.4-1586.8) 9 articles	No data	1135.5/100,000 (814.0-1581.4) 37 articles	302.1/100,000 (187.2-487.0) 8 articles	459.4/100,000 (312.1-675.8) 23 articles	565.0/100,000 (340.3-936.5) 23 articles
35-44	10.1/100,000 (7.8-13.1) 5 articles	10.1/100,000 (7.8-13.1) 5 articles	No data	No data	No data	No data	10.1/100,000 (7.8-13.1) 5 articles	Insufficient data	Insufficient data
45-54	81.3/100,000 (56.8-116.3) 9 articles	75.9/100,000 (54.1-106.4) 8 articles	Insufficient data	No data	No data	131.0/100,000 (28.9-590.9) 2 articles	79.3/100,000 (54.6-115.0) 7 articles	82.1/100,000 (53.2-126.7) 4 articles	88.4/100,000 (56.8-137.7) 5 articles
55-64	394.7/100,000 (260.5-597.7)	276.4/100,000 (204.4-373.7)	2230.0/100,000	318.2/100,000 (129.0-783.0)	No data	582.2/100,000 (324.8-1014.4)	238.8/100,000 (165.9-343.6)	397.7/100,000 (263.0-601.1)	426.1/100,000 (243.0-746.1)

	22 articles		15 articles	(1415.2-3497.3) 3 articles	4 articles			13 articles	9 articles		18 articles	19 articles
40-49	32.3/100,000 (18.8-55.5) 5 articles		32.3/100,000 (18.8-55.5) 5 articles	No data	No data	No data		No data	32.3/100,000 (18.8-55.5) 5 articles		Insufficient data	Insufficient data
50-59	114.9/100,000 (92.4-142.9) 14 articles		115.2/100,000 (91.6-144.9) 9 articles	No data	112.4/100,000 (62.2-203.2) 5 articles	No data		111.9/100,000 (69.2-181.0) 7 articles	115.7/100,000 (90.6-147.6) 7 articles		114.3/100,000 (92.7-140.8) 10 articles	119.7/100,000 (91.6-156.3) 11 articles
40-64	149.2/100,000 (66.4-335.2) 4 articles		172.7/100,000 (162.7-183.4) 3 articles	No data	Insufficient data	No data		149.5/100,000 (44.5-501.1) 3 articles	Insufficient data		123.8/100,000 (33.5-456.7) 4 articles	146.5/100,000 (65.7-326.4) 3 articles
45-64	159.3/100,000 (100.6-252.3) 11 articles		135.3/100,000 (95.9-190.8) 10 articles	Insufficient data	No data	No data		226.6/100,000 (23.3-2165.0) 2 articles	149.9/100,000 (109.7-204.7) 9 articles		168.3/100,000 (118.0-240.1) 6 articles	133.3/100,000 (79.9-222.4) 6 articles
50-64	154.8/100,000 (112.6-212.9) 9 articles		145.2/100,000 (104.5-201.8) 5 articles	Insufficient data	181.3/100,000 (92.9-353.5) 3 articles	No data		165.5/100,000 (85.8-318.8) 5 articles	146.9/100,000 (105.5-204.5) 4 articles		188.3/100,000 (126.2-280.7) 3 articles	255.3/100,000 (126.0-516.8) 3 articles

¹ there were no studies

² there was only one study

Alzheimer's disease

		World Bank Classification				Study methodology		Gender	
Age ranges	Alzheimer's disease	High-income countries	Upper-middle-income countries	Lower-middle-income countries	Low-income countries	Cohort studies	Register-based studies	Male	Female
All	117.4/100,000 (52.3-263.1) 20 articles	40.9/100,000 (15.2-110.2) 11 articles	516.7/100,000 (269.1-989.9) 6 articles	346.1/100,000 (88.9-1338.1) 3 articles	No data	505.3/100,000 (249.3-1021.7) 11 articles	21.7/100,000 (15.3-30.7) 9 articles	123.8/100,000 (28.1-544.6) 9 articles	109.9/100,000 (34.5-350.2) 8 articles
All except 60-64	60.6/100,000 (28.2-129.8) 14 articles	23.5/100,000 (15.4-36.0) 9 articles	336.1/100,000 (205.4-549.6) 3 articles	246.3/100,000 (40.0-1501.8) 2 articles	No data	276.7/100,000 (136.7-559.5) 6 articles	21.1/100,000 (14.5-30.6) 8 articles	Not applicable	Not applicable
30-34	Not applicable	Not applicable	No data	No data	No data	No data	Not applicable	No data	No data
35-39	0.5/100,000 (0.1-3.2) 2 articles	0.5/100,000 (0.1-3.2) 2 articles	No data	No data	No data	No data	0.5/100,000 (0.1-3.2) 2 articles	No data	No data
40-44	0.4/100,000 (0.01-6.4) 3 articles	0.4/100,000 (0.01-6.4) 3 articles	No data	No data	No data	No data	0.4/100,000 (0.01-6.4) 3 articles	No data	No data
45-49	0.6/100,000 (0.01-2.8) 4 articles	0.6/100,000 (0.01-2.8) 4 articles	No data	No data	No data	No data	0.6/100,000 (0.01-2.8) 4 articles	Insufficient data	Insufficient data
50-54	11.5/100,000 (8.8-15.1) 6 articles	11.4/100,000 (8.7-15.0) 5 articles	No data	Insufficient data	No data	Insufficient data	11.4/100,000 (8.7-15.0) 5 articles	2 articles	2 articles
55-59	62.6/100,000 (33.7-116.3) 10 articles	35.4/100,000 (27.1-46.4) 7 articles	Insufficient data	162.2/100,000 (76.4-344.1) 2 articles	No data	227.9/100,000 (118.7-437.2) 3 articles	35.4/100,000 (27.1-46.4) 7 articles	51.6/100,000 (17.9-149.2) 3 articles	121.7/100,000 (49.1-301.1) 5 articles
60-64	273.4/100,000 (123.2-605.8) 14 articles	135.0/100,000 (47.8-380.6) 8 articles	1007.7/100,000 (528.5-1913.4) 3 articles	513.0/100,000 (141.3-1843.9) 3 articles	No data	947.3/100,000 (422.0-2112.8) 7 articles	85.3/100,000 (57.2-127.3) 7 articles	182.5/100,000 (77.5-429.6) 5 articles	293.1/100,000 (69.7-1223.3) 7 articles
40-64	Insufficient data	Insufficient data	No data	No data	No data	No data	Insufficient data	Insufficient data	Insufficient data
45-64	28.8/100,000 (20.9-39.7) 7 articles	28.8/100,000 (20.9-39.7) 7 articles	No data	No data	No data	No data	28.8/100,000 (20.9-39.7) 7 articles	26.9/100,000 (19.5-37.1) 3 articles	30.3/100,000 (22.1-41.4) 3 articles
50-64	Insufficient data	No data	No data	Insufficient data	No data	Insufficient data	No data	Insufficient data	Insufficient data

55-64	354.6/100,000 (171.1-733.3) 4 articles		Insufficient data	229.9/100,000 (165.1-320.0) 2 articles	Insufficient data	No data		354.6/100,000 (171.1-733.3) 4 articles	No data		188.2/100,000 (67.4-524.3) 3 articles	283.3/100,000 (193.0-415.7) 3 articles
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Vascular dementia

			World Bank Classification					Study methodology	
Age ranges	Vascular dementia		High-income countries	Upper-middle-income countries	Lower-middle-income countries	Low-income countries		Cohort studies	Register-based studies
All	48.7/100,000 (17.4-136.0) 13 articles		12.3/100,000 (5.5-27.5) 7 articles	483.4/100,000 (260.6-895.1) 4 articles	204.8/100,000 (97.7-428.9) 2 articles	No data		260.7/100,000 (123.3-550.3) 7 articles	9.1/100,000 (5.8-14.3) 6 articles
All except 60-64	29.7/100,000 (10.7-82.4) 9 articles		13.7/100,000 (5.7-33.0) 6 articles	400.6/100,000 (311.8-514.6) 2 articles	Insufficient data	No data		162.6/100,000 (68.3-386.6) 4 articles	9.4/100,000 (6.0-14.9) 5 articles
30-34	1.2/100,000 (0.4-3.8) 2 articles		1.2/100,000 (0.4-3.8) 2 articles	No data	No data	No data		No data	1.2/100,000 (0.4-3.8) 2 articles
35-39	3.2/100,000 (1.6-6.4) 3 articles		3.2/100,000 (1.6-6.4) 3 articles	No data	No data	No data		No data	3.2/100,000 (1.6-6.4) 3 articles
40-44	4.9/100,000 (1.4-16.4) 4 articles		4.9/100,000 (1.4-16.4) 4 articles	No data	No data	No data		No data	4.9/100,000 (1.4-16.4) 4 articles
45-49	2.9/100,000 (0.4-20.2) 4 articles		2.9/100,000 (0.4-20.2) 4 articles	No data	No data	No data		No data	2.9/100,000 (0.4-20.2) 4 articles
50-54	8.6/100,000 (3.0-24.0) 5 articles		9.5/100,000 (3.5-25.5) 4 articles	No data	Insufficient data	No data		Insufficient data	9.5/100,000 (3.5-25.5) 4 articles
55-59	25.8/100,000 (14.4-46.3) 5 articles		25.7/100,000 (13.8-47.8) 4 articles	No data	Insufficient data	No data		Insufficient data	25.7/100,000 (13.8-47.8) 4 articles
60-64	97.7/100,000 (35.6-268.0) 7 articles		42.2/100,000 (23.2-76.8) 4 articles	Insufficient data	204.8/100,000 (97.7-428.9) 2 articles	No data		411.4/100,000 (148.2-1137.3) 3 articles	42.2/100,000 (23.2-76.8) 4 articles
45-64	15.3/100,000 (8.7-26.9) 5 articles		15.3/100,000 (8.7-26.9) 5 articles	No data	No data	No data		No data	15.3/100,000 (8.7-26.9) 5 articles

55-64	322.5/100,000 (166.1-625.3) 3 articles		Insufficient data	400.6/100,000 (311.8-514.6) 2 articles	No data	No data		322.5/100,000 (166.1-625.3) 3 articles	No data
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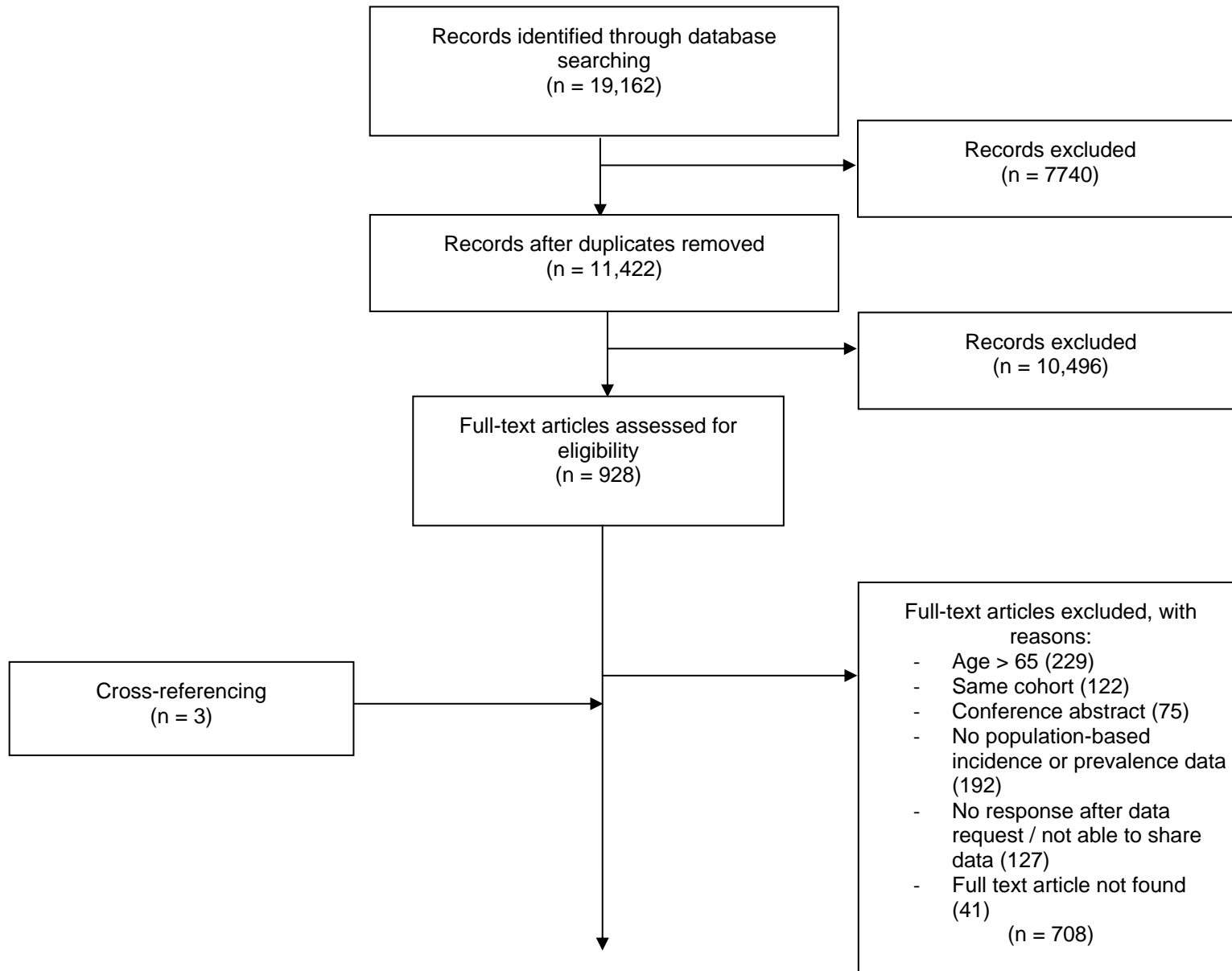
Frontotemporal dementia

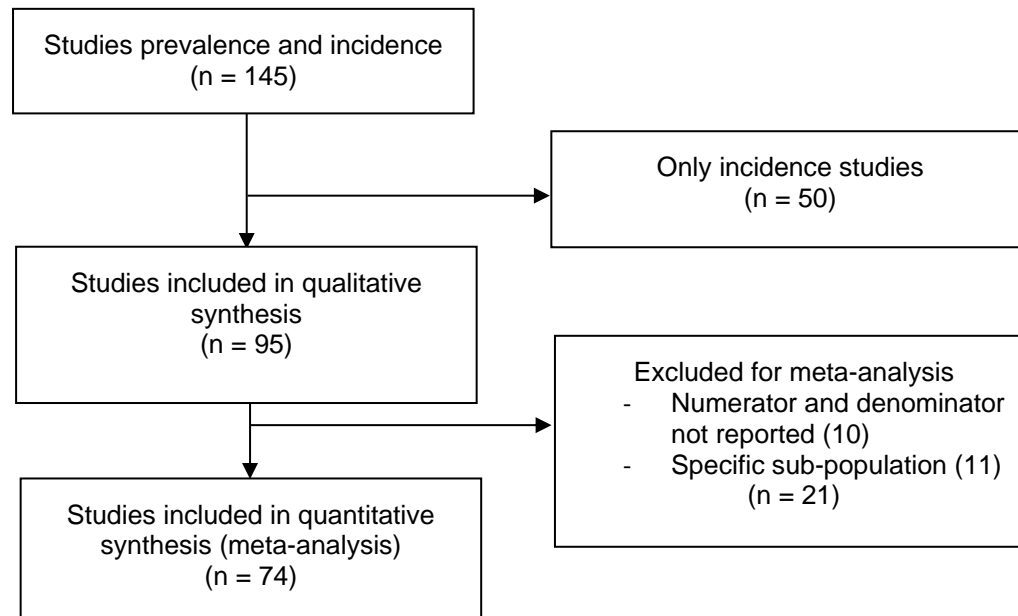
			World Bank Classification					Study methodology	
Age ranges	Frontotemporal dementia		High-income countries	Upper-middle-income countries	Lower-middle-income countries	Low-income countries		Cohort studies	Register-based studies
All	6.8/100,000 (3.4-13.6) 12 articles		6.8/100,000 (3.4-13.6) 12 articles	No data	No data	No data		No data	6.8/100,000 (3.4-13.6) 12 articles
30-34	0.1/100,000 (0.0-0.5) 3 articles		0.1/100,000 (0.0-0.5) 3 articles	No data	No data	No data		No data	0.1/100,000 (0.0-0.5) 3 articles
35-39	0.1/100,000 (0.0-0.5) 3 articles		0.1/100,000 (0.0-0.5) 3 articles	No data	No data	No data		No data	0.1/100,000 (0.0-0.5) 3 articles
40-44	0.3/100,000 (0.1-0.8) 4 articles		0.3/100,000 (0.1-0.8) 4 articles	No data	No data	No data		No data	0.3/100,000 (0.1-0.8) 4 articles
45-49	2.0/100,000 (0.6-7.4) 4 articles		2.0/100,000 (0.6-7.4) 4 articles	No data	No data	No data		No data	2.0/100,000 (0.6-7.4) 4 articles
50-54	1.8/100,000 (1.2-2.7) 5 articles		1.8/100,000 (1.2-2.7) 5 articles	No data	No data	No data		No data	1.8/100,000 (1.2-2.7) 5 articles
55-59	9.1/100,000 (3.2-25.7) 5 articles		9.1/100,000 (3.2-25.7) 5 articles	No data	No data	No data		No data	9.1/100,000 (3.2-25.7) 5 articles
60-64	7.4/100,000 (3.6-15.2) 5 articles		7.4/100,000 (3.6-15.2) 5 articles	No data	No data	No data		No data	7.4/100,000 (3.6-15.2) 5 articles
30-64	2.6/100,000 (1.1-6.3) 4 articles		2.6/100,000 (1.1-6.3) 4 articles	No data	No data	No data		No data	2.6/100,000 (1.1-6.3) 4 articles
45-64	11.7/100,000 (6.7-20.5) 9 articles		11.7/100,000 (6.7-20.5) 9 articles	No data	No data	No data		No data	11.7/100,000 (6.7-20.5) 9 articles

eTable 4. Prevalence of Dementia With Lewy Bodies/Parkinson Disease Dementia in the 4 Eligible Studies

Article	Prevalence dementia with Lewy Body	Prevalence Parkinson disease dementia	Prevalence mixed
Yue et al.	60-64 overall: 180/100,000		
Ratnavalli et al.		45-64 overall: 6.9/100,000 45-64 male: 10.9/100,000 45-64 female: 2.8/100,000	
Ikejima et al.			50-54 overall: 1.5/100,000 55-59 overall: 5.5/100,000 60-64 overall: 12.3/100,000 45-64 overall: 2.3/100,000 20-64 overall: 4.8/100,000
Ott et al.		55-64 overall: 4/100,000 55-64 male: 0/100,000 55-64 female: 10/100,000	

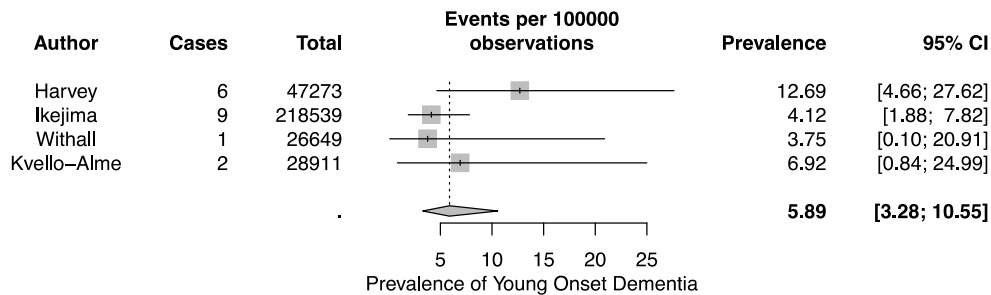
eFigure 1. Flowchart of Included and Excluded Studies



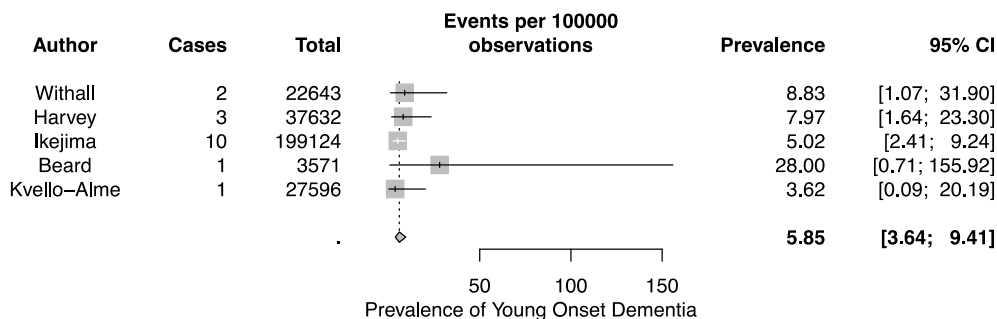


eFigure 2. Forest Plot 5-Year Age Bands for All-Type YOD

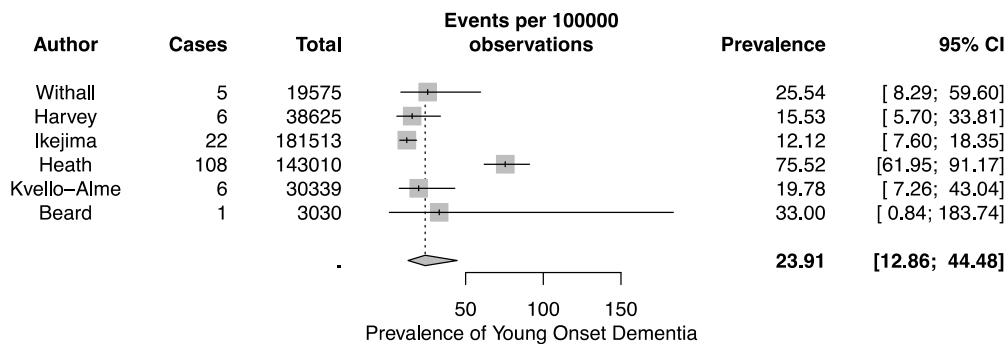
30-34



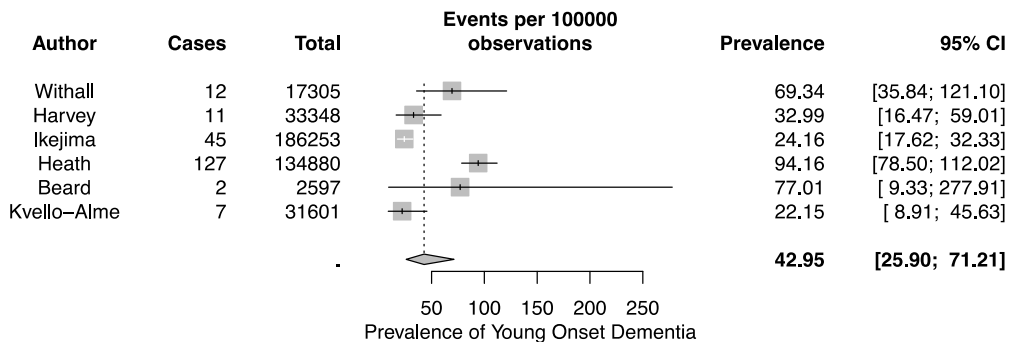
35-39



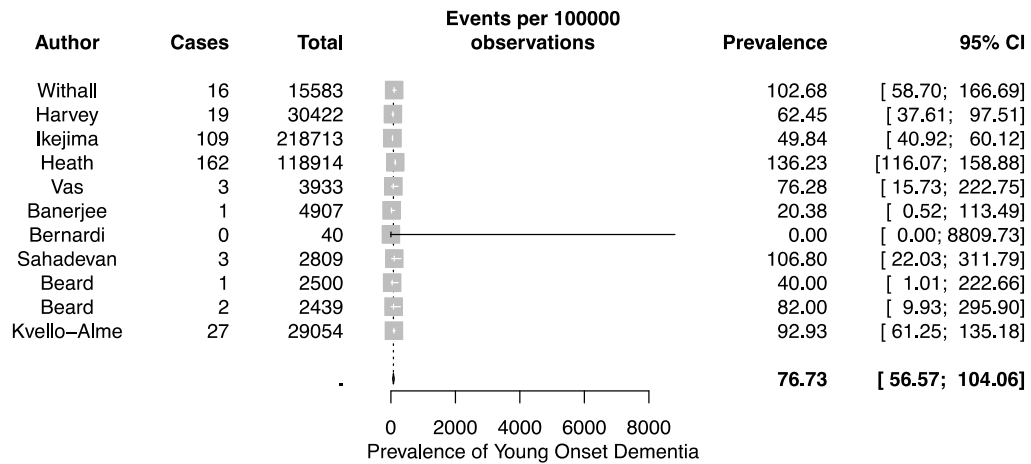
40-44



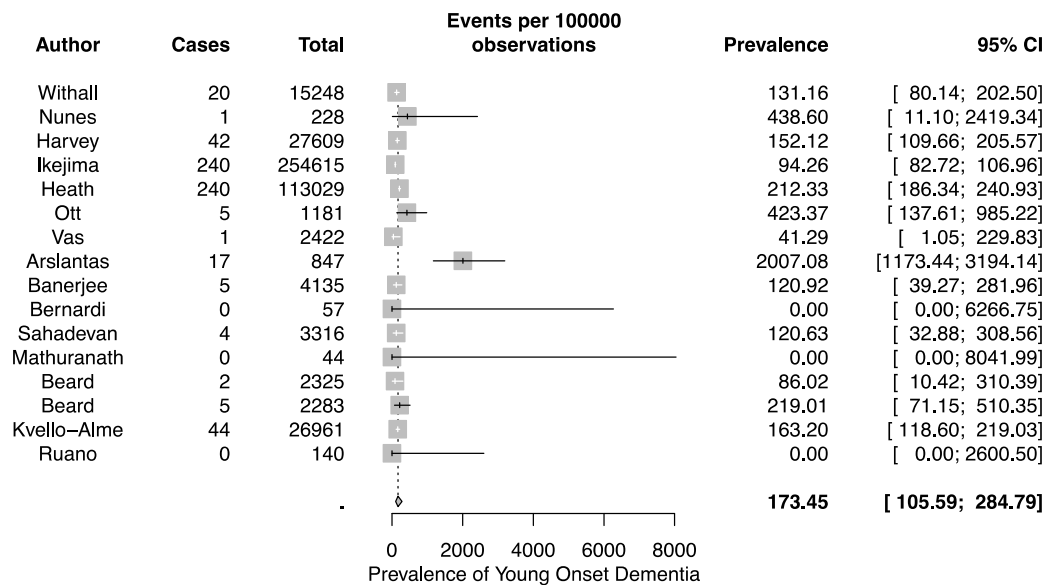
45-49



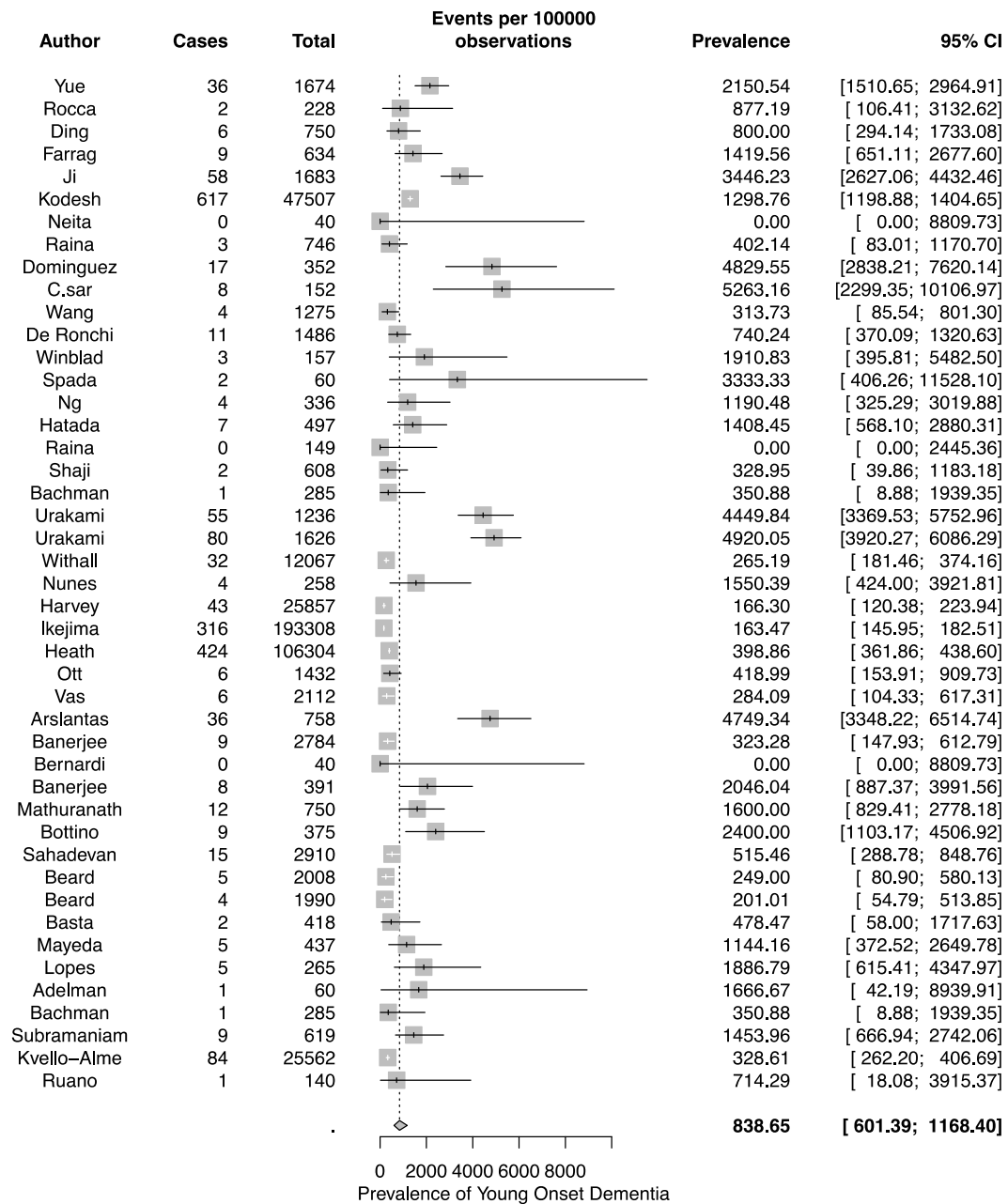
50-54



55-59



60-64



eResults. Subgroup Analyses Within Subtypes of Dementia

Subgroup analyses Alzheimer's disease

Subgroup analyses were also performed for gender, World Bank classification and study methodology (see eTable 3). Data on gender-specific estimates were only available for the age bands 55-59 and 60-64 years, and prevalence was generally similar in men and women. For World Bank classification, data from all age bands were available for high-income countries, but for upper-middle-income countries, data were only available for age bands 60-64 years, and for lower-middle-income countries for the age bands 55-59 and 60-64 years. In these age bands, prevalence was higher in upper-middle-income and lower-middle-income countries compared to high-income countries. For study methodology, data from register-based studies were available for all age bands, but cohort studies were only conducted in the age bands 55-59 and 60-64 years. In these two age bands, prevalence was higher in the cohort studies than register-based studies.

Subgroup analyses vascular dementia

Subgroup analyses were performed on the World Bank classification and study design (see eTable 3). For World Bank classification, data on all age bands was available in high-income countries, and only for the age band 60-64 data was available in lower-middle-income countries. In this age band prevalence was higher in lower-middle-income countries than high-income countries.

For study design, register-based studies were conducted in all age bands, whereas cohort studies were only conducted in the 60-64 age band. In this age band, prevalence was higher in cohort studies than register-based studies.

Subgroup analyses frontotemporal dementia

No subgroup analyses were performed since there were insufficient data to pool the prevalence of men and women separately. Additionally, all studies were conducted in high-income countries, and the methodology was similar among all studies, i.e., register-based studies.